SANTA CRUZ BIOTECHNOLOGY, INC.

PDF siRNA (h): sc-93155

BACKGROUND

Protein synthesis occurs after formylation of methionine by methionyl-tRNA formyl transferase (FMT) and transfer of the charged initiator f-met tRNA to the ribosome. Removal of the formyl moiety on methionine of nascent proteins by the metalloprotease peptide deformylase (PDF) is a necessary activity for prokaryotic cell viability. This essential step in bacterial protein synthesis makes PDF an important target for antibacterial drug development. PDF, also known as PDF1A, is a 243 amino acid enzyme that may be involved in deformylation of proteins during mitochondrial protein synthesis. PDF is a unique and highly unstable metallopeptidase, which contains a ferrous ion (Fe^{2+}) as the catalytic metal. Ubiquitously expressed and inhibited by actinonin, PDF is considered an important target for anticancer therapy.

REFERENCES

1. Apfel, C.M., et al. 2001. Peptide deformylase as an antibacterial drug target: target validation and resistance development. Antimicrob. Agents Chemother. 45: 1058-1064.
2. Lee, M.D., et al. 2003. A new human peptide deformylase inhibitable by actinonin. Biochem. Biophys. Res. Commun. 312: 309-315.
3. Lee, M.D., et al. 2004. Human mitochondrial peptide deformylase, a new anticancer target of actinonin-based antibiotics. J. Clin. Invest. 114: 1107-1116.
4. Johnson, K.W., et al. 2005. PDF inhibitors: an emerging class of antibacterial drugs. Curr. Drug Targets Infect. Disord. 5: 39-52.
5. Chen, D. and Yuan, Z. 2005. Therapeutic potential of peptide deformylase inhibitors. Expert Opin. Investig. Drugs 14: 1107-1116.
6. Leeds, J.A. and Dean, C.R. 2006. Peptide deformylase as an antibacterial target: a critical assessment. Curr. Opin. Pharmacol. 6: 445-452.

CHROMOSOMAL LOCATION

Genetic locus: PDF (human) mapping to 16q22.1.

PRODUCT

PDF siRNA (h) is a target-specific 19-25 nt siRNA designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see PDF shRNA Plasmid (h): sc-93155-SH and PDF shRNA (h) Lentiviral Particles: sc-93155-V as alternate gene silencing products.

STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNAses and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

PDF siRNA (h) is recommended for the inhibition of PDF expression in human cells.

SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10 µM in 66 µl. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor PDF gene expression knockdown using RT-PCR Primer: PDF (h)-PR: sc-93155-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.